

Welcome to...

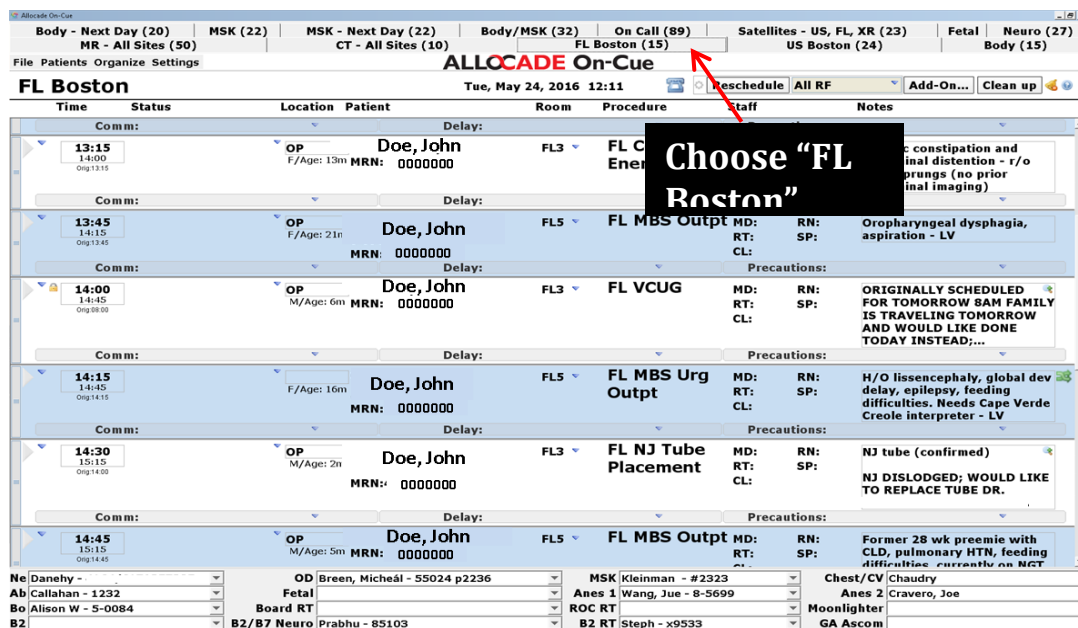
Fluoroscopy!

During your time at BCH, you will spend about one week in fluoroscopy. You will learn the basics of pediatric GU imaging, mostly VCUGs, which you should feel comfortable performing from beginning to end on a boy or a girl. You will also learn GI imaging, including upper GI, small bowel follow-through, enemas and modified swallow studies.

THE WORK DAY:

You should arrive at 7:30 AM for AM GU rounds. To prepare for rounds, use the Allocade list to familiarize yourself with the patients, add pertinent information from the EMR to the notes section and review relevant prior imaging. Looking up the patients the day before is highly advised. You must know the patient, understand the purpose of the study and how it is to be performed. You must be clear on these points and the plan before meeting the patient.

At 1 PM, there will be a second set of rounds for the afternoon GI patients. The same rules apply as for AM rounds.



Body - Next Day (20) MSK (22) MSK - Next Day (22) Body/MSK (32) On Call (89) Satellites - US, FL, XR (23) Fetal Neuro (27)									
MR - All Sites (50) CT - All Sites (10) FL Boston (15) US Boston (24) Body (15)									
File Patients Organize Settings									
ALLOCADE On-Cue									
Tue, May 24, 2016 12:11									
Reschedule All RF Add-On... Clean up									
Time	Status	Location	Patient	Room	Procedure	Staff	Notes		
Comm: Delay:									
13:15 14:00 Orig 13:15	OP	F/Age: 13m	Doe, John MRN: 0000000	FL3	FL C Ener			c constipation and inal distention - r/o prungs (no prior inal imaging)	
Comm: Delay:									
13:45 14:10 Orig 13:45	OP	F/Age: 21m	Doe, John MRN: 0000000	FL5	FL MBS Outpt	MD: RT: CL:	RN: SP:	Oropharyngeal dysphagia, aspiration - LV	
Comm: Delay:									
14:00 14:45 Orig 14:00	OP	M/Age: 6m	Doe, John MRN: 0000000	FL3	FL VCUG	MD: RT: CL:	RN: SP:	ORIGINALLY SCHEDULED FOR TOMORROW 8AM FAMILY IS TRAVELING TOMORROW AND WOULD LIKE DONE TODAY INSTEAD;...	
Comm: Delay:									
14:15 14:45 Orig 14:15		F/Age: 16m	Doe, John MRN: 0000000	FL5	FL MBS Urg Outpt	MD: RT: CL:	RN: SP:	H/O lissencephaly, global dev delay, epilepsy, feeding difficulties. Needs Cape Verde Creole interpreter - LV	
Comm: Delay:									
14:30 15:15 Orig 14:30	OP	M/Age: 2m	Doe, John MRN: 0000000	FL3	FL NJ Tube Placement	MD: RT: CL:	RN: SP:	NJ tube (confirmed) NJ DISLODGED; WOULD LIKE TO REPLACE TUBE DR.	
Comm: Delay:									
14:45 15:15 Orig 14:45	OP	M/Age: 5m	Doe, John MRN: 0000000	FL5	FL MBS Outpt	MD: RT: CL:	RN: SP:	Former 28 wk premie with CLD, pulmonary HTN, feeding difficulties currently on NGT	
Ne Danehy -									
Ab Callahan - 1232									
Bo Alison W - 5-0084									
B2									
OD Breen, Micheál - 55024 p2236									
Fetal									
Board RT									
B2/B7 Neuro Prabhu - 85103									
MSK Kleinman - #2323									
Anes 1 Wang, Jue - 8-5699									
ROC RT									
B2 RT Steph - x9533									
Chest/CV Chaudry									
Anes 2 Cravero, Joe									
Moonlighter									
GA Ascom									

ALLOCADE On-Cue

Body - Next Day (20) | MSK (22) | MSK - Next Day (22) | Body/MSK (32) | On Call (85) | Satellites - US, FL, XR (21) | Fetal | Neuro (25)
 MR - All Sites (48) | CT - All Sites (10) | FL Boston (15) | US Boston (22) | Body (15)

File Patients Organize Settings

FL Boston Tue, May 24, 2016 12:12 [Reschedule] [All RF] [Add-On...] [Clean up]

Time	Status	Location	Patient	Room	Procedure	Staff	Notes
13:15 14:00 Orig 13:15	OP	F/Age: 13m	Doe, John MRN: 0000000	FL3	FL Contrast	MD: RN: RT: SP: CL:	chronic constipation and abdominal distention - r/o Hirschsprung's (no prior abdominal imaging)
13:45 Orig 13:45	OP	F/Age: 21n	Doe, John MRN: 0000000	FL5	FL MBS Outpt	MD: RN: RT: SP:	Oropharyngeal dysphagia, aspiration - LV
14:00 14:45 Orig 08:00	OP	M/Age: 6m	Doe, John MRN: 0000000	FL3	FL MBS Urg Outpt	MD: RN: RT: SP: CL:	H/O lissencephaly, global dev delay, epilepsy, feeding difficulties. Needs Cape Verde Creole interpreter - LV
14:15 Orig 14:15	OP	F/Age: 16m	Doe, John MRN: 0000000	FL5	FL NJ Tube Placement	MD: RN: RT: SP: CL:	NJ tube (confirmed) NJ DISLODGED; WOULD LIKE TO REPLACE TUBE DR.
14:30 15:15 Orig 14:00	OP	M/Age: 2m	Doe, John MRN: 0000000	FL3	FL NJ Tube Placement	MD: RN: RT: SP: CL:	NJ tube (confirmed) NJ DISLODGED; WOULD LIKE TO REPLACE TUBE DR.
14:45 15:15 Orig 14:45	OP	M/Age: 5m	Doe, John MRN: 0000000	FL5	FL MBS Outpt	MD: RN: RT: SP:	Former 28 wk premie with CLD, pulmonary HTN, feeding difficulties currently on NGT

Ne Danehy - OD Breen, Micheál - 55024 p2236 MSK Kleinman - #2323 Chest/CV Chaudry
 Ab Callahan - 1232 Fetal Anes 1 Wang, Jue - 8-5699 Anes 2 Cravero, Joe
 Bo Alison W - 5-0084 Board RT ROC RT Moonlighter
 B2 B2/B7 Neuro Prabhu - 85103 B2 RT Steph - x9533 GA Ascom

Right click on the study for more information

ALLOCADE On-Cue

Body - Next Day (20) | MSK (22) | MSK - Next Day (22) | Body/MSK (32) | On Call (89) | Satellites - US, FL, XR (23) | Fetal | Neuro (27)
 MR - All Sites (50) | CT - All Sites (10) | FL Boston (15) | US Boston (24) | Body (15)

File Patients Organize Settings

FL Boston Tue, May 24, 2016 12:11 [Reschedule] [All RF] [Add-On...] [Clean up]

Time	Status	Location	Patient	Room	Procedure	Staff	Notes
13:15 14:00 Orig 13:15	OP	F/Age: 13m	Doe, John MRN: 0000000	FL3	FL Contrast	MD: RN: RT: SP: CL:	chronic constipation and abdominal distention - r/o Hirschsprung's (no prior abdominal imaging)
13:45 Orig 13:45	OP	F/Age: 21n	Doe, John MRN: 0000000	FL5	FL MBS Outpt	MD: RN: RT: SP:	Oropharyngeal dysphagia, aspiration - LV
14:00 14:45 Orig 08:00	OP	M/Age: 6m	Doe, John MRN: 0000000	FL3	FL MBS Urg Outpt	MD: RN: RT: SP: CL:	ORIGINALLY SCHEDULED FOR TOMORROW 8AM FAMILY
14:15 Orig 14:15	OP	F/Age: 16m	Doe, John MRN: 0000000	FL5	FL NJ Tube Placement	MD: RN: RT: SP: CL:	NJ tube (confirmed) NJ DISLODGED; WOULD LIKE TO REPLACE TUBE DR.
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Ne Danehy - OD Breen, Micheál - 55024 p2236 MSK Kleinman - #2323 Chest/CV Chaudry
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 Bo Alison W - 5-0084 Board RT ROC RT Moonlighter
 B2 B2/B7 Neuro Prabhu - 85103 B2 RT Steph - x9533 GA Ascom

Left click on the box to add more information (write your initials for ease of reference).

Remember to scroll to the bottom to work-up the unscheduled orders (usually urgent inpatients)

Body - Next Day (20) | MSK (22) | MSK - Next Day (22) | Body/MSK (32) | On Call (86) | Satellites - US, FL, US Boston

FL Boston (15)

2016 12:14 Reschedule All RF

Room Procedure Staff

Precautions:

15:45 16:15 M/Age: 5m Doe, John FL5 FL MBS Inpt MD: RN: RT: SP: CL: Precautions:

Comm: Delay: Precautions:

16:15 16:45 B&W** M/Age: 2m Doe, John FL5 FL MBS Outpt MD: RN: RT: SP: CL: Precautions:

Comm: Delay: Precautions:

Unscheduled Orders

7S ICU M/Age: 2y Doe, John FL3 FL Esophagram MD: RN: RT: SP: CL: Precautions:

Comm: Delay: Precautions:

THE WORKLIST:

On Radstar, subscribe to "Boston" – GI/GU

If the volume of fluoroscopy studies is low, your attending may instruct you to subscribe to the CR (xray) worklist and read radiographs.

RadSTAR Subscription List - Windows Internet Explorer

http://radstar/RadSubscribeReporting.aspx

File Edit View Favorites Tools Help

CHB WebXChange Citi

Click on subscribe. Should be modality based

Schedule Monitor Dashboard Subscription Unsigned(11) Dictated Protocol(C=1 F=9)

Subscription Type Modality Based

Subscribe

CR-HAR Show TeleRIS Exams with no Images Show TeleRIS exams with Scrollbar You are subscribed to TeleRIS; however, there are no exams to show at this time

Modality: MRB-BOS, CR-PEA, CR-LEX, CR-BOS, CR-STE, CR-WAL, CR-DAR

Select Boston GI and GU

Modality Subscribe Page - Windows Internet Explorer

http://radstar/ModalitySubscribe.aspx?RefreshPage=RadSubscribeReporti

RadSTAR Subscribe Page

Select the Modalities you wish to subscribe

Patient Location: ☐ Inpatient ☐ Outpatient ☒ All Locations

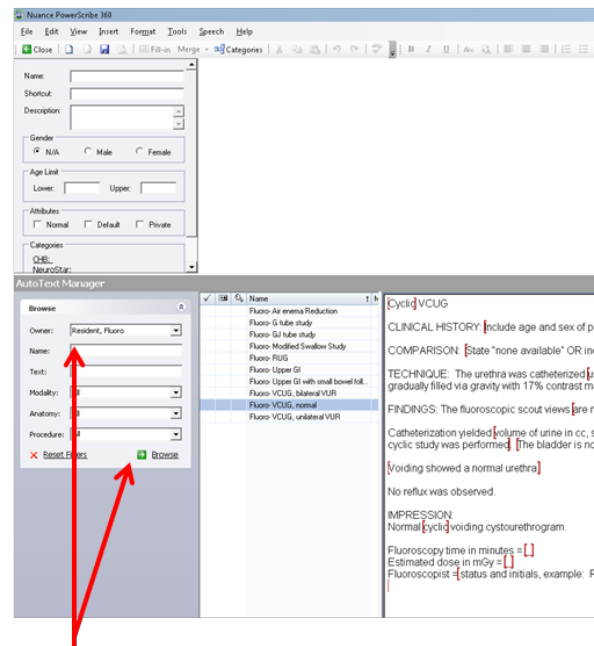
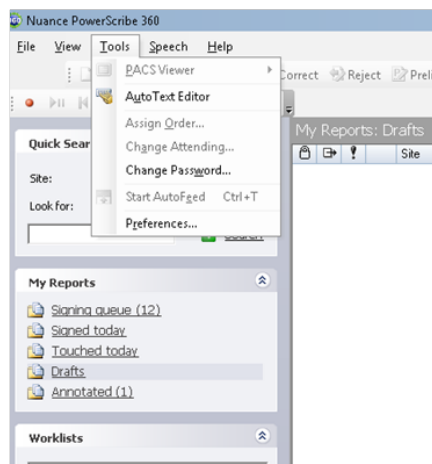
Modality	Boston	Lexington	BCH North	BCH South	Waltham	North Dartmouth
Body CT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Body MR	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CR	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fetal MR/US	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
GI	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
GU	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
IR	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Neuro CT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

THE REPORTS:

Go to the "Auto Text Editor" tab and copy the macros from "Resident, Fluoro"

Whenever possible use these macros for ALL of your report. If you are doing an uncommon exam with no appropriate macro available, try to structure your report in a similar manner.

Go to Auto Text Editor under tools



Choose owner: Resident, Fluoro
Click browse. Clone the fluoro macros.
Carefully read the bracketed fields which will
Instruct you on content.

GOALS:

1) Cleveland Clinic Modules

By Tuesday of your fluoroscopy rotation, you should complete the following assigned modules, and email the transcripts to Abby.

- Intussusception
- Malrotation and Midgut Volvulus (completed the first week)
- Jejunal and Ileal Stenosis/Atresia
- Newborn Low Intestinal Obstruction
- Vesicoureteral Reflux

2) To help ensure that you get to be involved in a variety of cases during the week, we have created a basic checklist of studies that should be your minimum goal for the week. Please have your attending check off on these studies as you demonstrate proficiency in performing them. Your ability to complete all of the recommended studies will of course dependent on the patient schedule for the week.

Attending Sign Off

VCUG – neonate, female	<input type="checkbox"/>	_____
VCUG- neonate, male	<input type="checkbox"/>	_____
VCUG- older female	<input type="checkbox"/>	_____
VCUG- older male	<input type="checkbox"/>	_____
UGI	<input type="checkbox"/>	_____
UGI	<input type="checkbox"/>	_____
Enema	<input type="checkbox"/>	_____
Post Op Esophagram	<input type="checkbox"/>	_____
Line Study	<input type="checkbox"/>	_____
G-Tube/GJ Tube Study	<input type="checkbox"/>	_____
Proficiency in Low Dose Fluoro	<input type="checkbox"/>	_____

THE BASICS:

See the provided powerpoint to learn the basics of UGI and VCUG technique.

Here is some background information on contrast use in fluoro:

Indications for oral contrast media in pediatric fluoroscopy

Study	Indication	Contrast Media
Upper GI or Esophagram	vomiting (especially bilious)	barium sulfate suspension or iso-osmolar water soluble (premature infant)
	acute or chronic abdominal pain	barium sulfate suspension
	choking sensation or dysphagia	barium sulfate suspension
	recent esophageal, gastric or small bowel surgery	low osmolar water soluble
	suspected esophageal, gastric or small bowel injury (blunt, penetrating, or iatrogenic trauma)	low osmolar water soluble
Upper GI with small bowel follow through	abdominal pain or obstruction	barium sulfate suspension or iso-osmolar water soluble (premature infant)
	weight loss or suspected inflammatory bowel disease	barium sulfate suspension
	premature infant with concern for necrotizing enterocolitis	iso-osmolar water soluble
Tube study	Check placement of enteric or cecostomy tube	low osmolar water soluble or barium sulfate suspension
	Placement of NJ tube	low osmolar water soluble or barium sulfate suspension

Indications for oral contrast media in pediatric fluoroscopy

Study	Indication	Contrast Media
Small bowel enteroclysis	suspected small bowel disease	Barium sulfate suspension +/- hydroxypropyl methylcellulose, CO ₂ , or air
Modified barium swallow (MBS)	dysphagia, suspected aspiration, pneumonia, choking with feeding, developmental delay	barium sulfate suspension (various consistencies: thin, nectar, honey, purée, solid foods)

Indications for stomal, sinus or enterocutaneous fistula contrast media in pediatric fluoroscopy

Study	Indication	Contrast Media
Stomagram	evaluation of parastomal stricture or obstruction	ionic low osmolar water soluble
Fistulogram or Sinogram	suspected enterocutaneous fistula or cutaneous sinus	low osmolar water soluble, followed by barium sulfate suspension if necessary

Iodine content and osmolality of enteric contrast media at Boston Children's Hospital

Contrast Media	Iodine Content (mg/ml)	Osmolality* (mOsm/kg water)
Iothalamate Meglumine (Cysto-Conray II) **	81	400
Iohexol (Omnipaque) 180	180	331
Ioversol (Optiray) 240***	240	502
Ioversol (Optiray) 320***	320	702
Diatrizoate Meglumine (Gastrografin or Gastroview)	370	1940
Barium Sulfate Suspension	NA	NA

*Normal serum osmolality is 275 - 295mOsm/kg

**Alternate is dilute Cystografin (Diatrizoate Meglumine)

***Can substitute with similar LOCM listed in Appendix A, ACR Manual on Contrast Media 10.2

Indications for rectal contrast media in pediatric fluoroscopy

Study	Indication	Contrast Media
Diagnostic enema	low intestinal obstruction in newborn	ionic low osmolar water soluble
	concern for NEC stricture	ionic low osmolar water soluble
	intractable constipation	ionic low osmolar water soluble
Therapeutic enema	meconium ileus	dilute high ismolar water soluble (diluted 50% with water)

Indications for rectal contrast media in pediatric fluoroscopy

Study	Indication	Contrast Media
	DIOS (distal intestinal obstruction syndrome) also known as meconium ileus equivalent	dilute high ismolar water soluble (diluted to 25% with iothalamate meglumine)
Defecography	intractable constipation	barium sulfate suspension paste
Air enema	intussusception	air (pneumatic reduction)

We hope that you have a fun and educational time during your fluoroscopy rotation, and if you have any questions or concerns, don't hesitate to ask me.

Sincerely,



Mei Chow